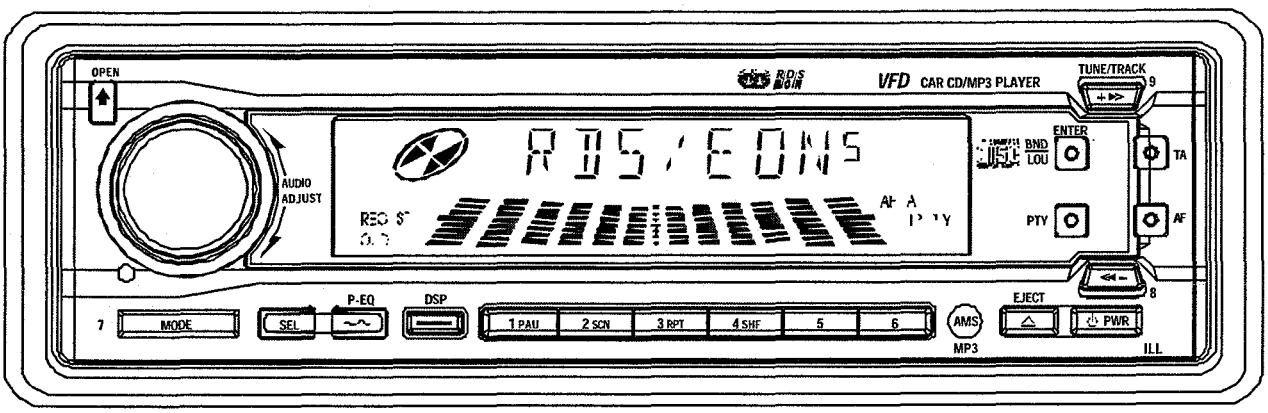
Roadstar®

Service Manual

PLL SYNTHESIZER STEREO RADIO WITH COMPACT DISC PLAYER DIGITAL



MODEL: CD801MP/FM

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DISASSEMBLY INSTRUCTIONS

1. Using the unlock key that came with the unit or a similar tool, unlock the Mounting Box and remove toward the rear of the unit.

2. Remove the screw (A) located on the rear of the top cabinet and remove the Top Cabinet.

3. Remove two screws (B) located on the rear of the bottom cabinet then remove the Bottom Cabinet.

4. Remove two screws (C) (one located at the left side and one located at the right side of the Front Bracket) then remove the Hooks.

5. Remove the Front Panel and the Ring.

6. Remove two screws (D) from each side of the base then remove the Base.

7. Remove two screws (E) from the front bracket and remove two screws (F) from the rear cabinet.

8. Remove two screws (G) from the front deck bracket then remove the Front Deck Bracket.
   Remove two screws (H) from the rear deck bracket then remove the Deck and the Rear Deck Bracket.

9. Remove the screw (I) and three screws (J) from the Heat Sink then remove the Heat Sink and the K7377 Heat Sink.

10. Remove the screws (K) and remove the Antenna Clip.
    Remove the screw (L) and remove the Wire Clip.

11. Remove two screws (M) from the rear cabinet of the right side then remove the IC7805 Bracket.

12. Remove five screws (N) from the main board then remove the Main Board.

13. Remove four screws (O) from each side of the rear cabinet then remove the Front Bracket and the Rear Cabinet.

DISASSEMBLY DIAGRAM

OPERATION CHECK

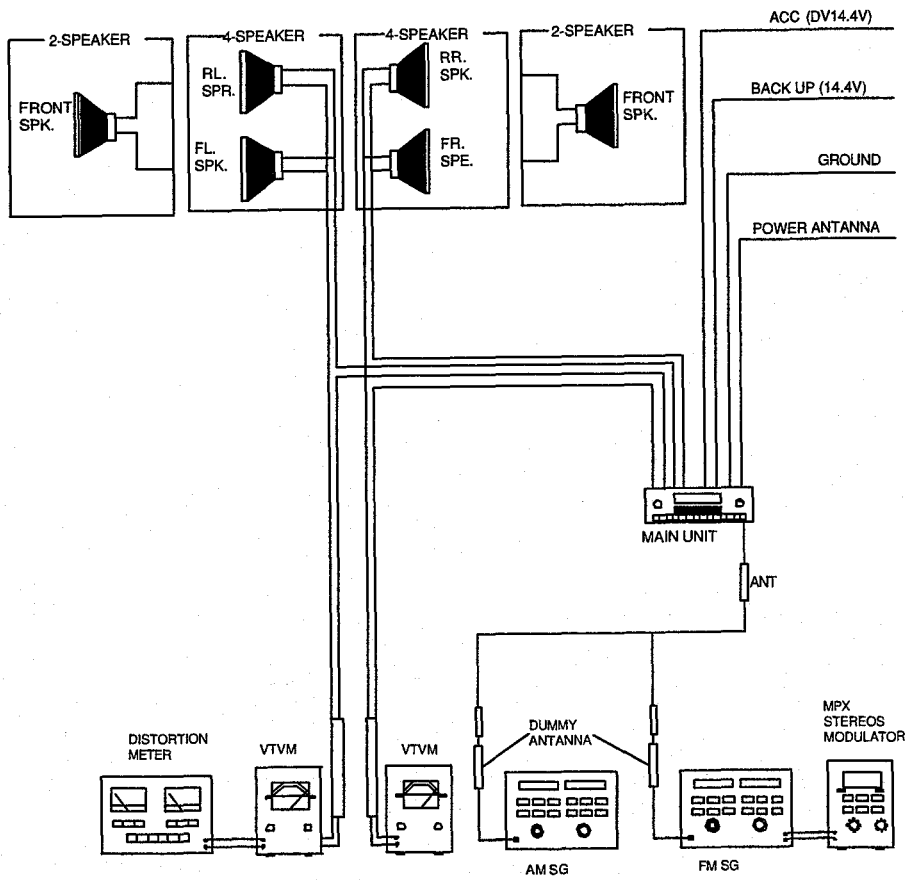
GENERAL SPECIFICATIONS OF SIGNAL

Standard frequency	FM	98.1 MHz (87.5, 108.0 MHz)
	MW	1000 kHz (522, 1620 kHz)
	LW	200 kHz (144, 288 kHz)
Signal output	FM	1mV
	MW	5 mV
	LW	5 mV
Modulation	MW	400 Hz 30% MOD.
	FM Stereo	1 kHz 75kHz DEV.
		46% for L only or
		R only pilot level 8%

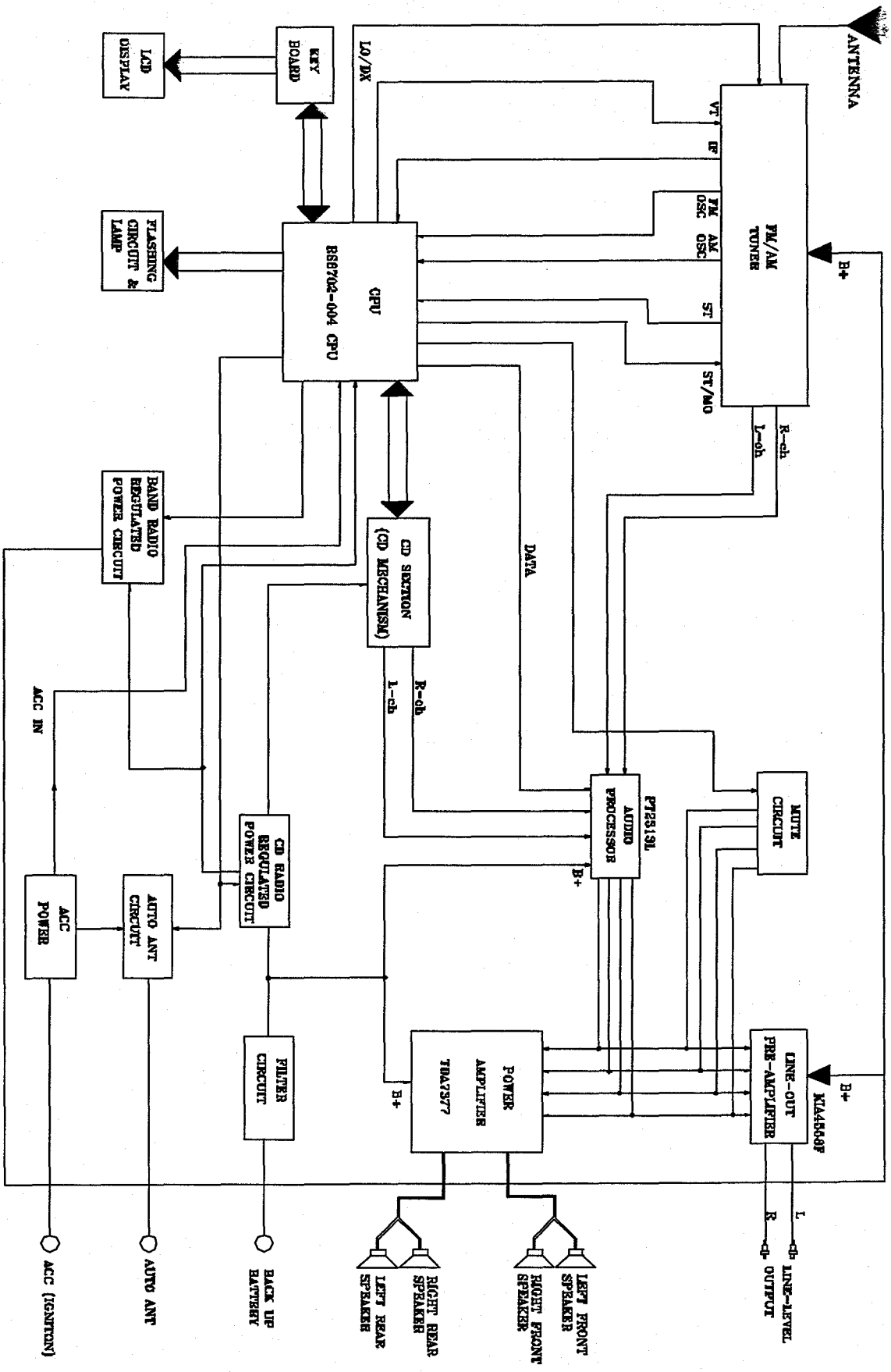
AF output level	FM/MW/LW
Power source voltage	DC 14.0V (Backup voltage is the same as this)
AF load impedance	4 ohm pure resistance
Balance	Center position of level
Tone	Center position

The signal strength read in this section is voltage on the antenna.

Test Diagram

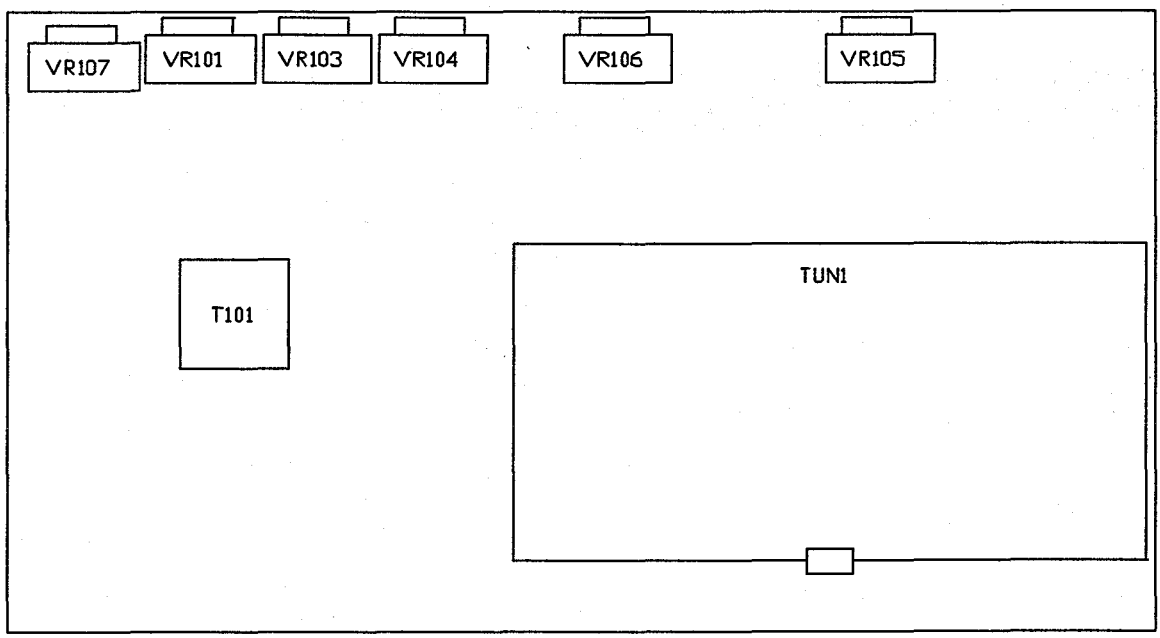


BLOCK DIAGRAM



ALIGNMENT LOCATIONS

FM TUNER BOARD



ALIGNMENT PROCEDURES

FM ADJUSTMENT

Equipment Required

- AM IF/RF signal generator
- Solid-state voltmeter (SSVM)
- Regulated DC power supply
- 2-CH voltmeter
- Distortion meter

FM Alignment Using FM Signal Generator

Note: Press the radio power switch to on the radio. Signal generator output must be kept as low as possible to avoid overload and clipping.

Step	Generator Coupling	Generator	Display Setting	Adjustment	Remarks
IF	FM RF signal Generator to Antenna input.	10.7 MHz Sweep output 60 dBμV	98.1 MHz	T101	Adjust so that maximum AF output power and minimum distortion
76 kHz Pilot Modula-tion	Signal generator to antenna receptacle	75 kHz Dev 45% for L only or R only pilot level 10%	98.1 MHz	VR105	Adjust to 76 kHz
-3 dB Limiting Sens.	Signal generator to antenna receptacle	60 dB/μV Output.	98.1 MHz	VR101	Adjust VR101 Making -14dB (±2dB) Limiting Sensitivity.
FM SNC Adjust-ment	98.1 MHz Dev. 45 kHz L+R=90 % Int. 1 kHz 60dBμV output	98.1 MHz @ 40 dBμ	98.1 MHz	VR106	V_{OR} - V_{OL} = 10 dB (± 3 dB)
FM Stereo S/N	Signal Generator Connected to Antenna	98.1MHz Int. 1kHz Dev. 75kHz.	98.1MHz	VR104	Adjust VR104 FM Stereo S/N is the optimum.
Auto Stop Sens.	Signal Generator Connected to Antenna.	98.1 MHz Int. 1kHz Dev. 75kHz 28 dB/μV.	98.1 MHz	VR107	Adjustment AF to stop station.

Note: The tuner module is well-adjust and adjustment is not recommended.

MW ADJUSTMENT

Equipment Required

- AM IF/RF signal generator
- Solid-state voltmeter (SSVM)
- Regulated DC power supply
- 2-CH voltmeter
- Distortion meter

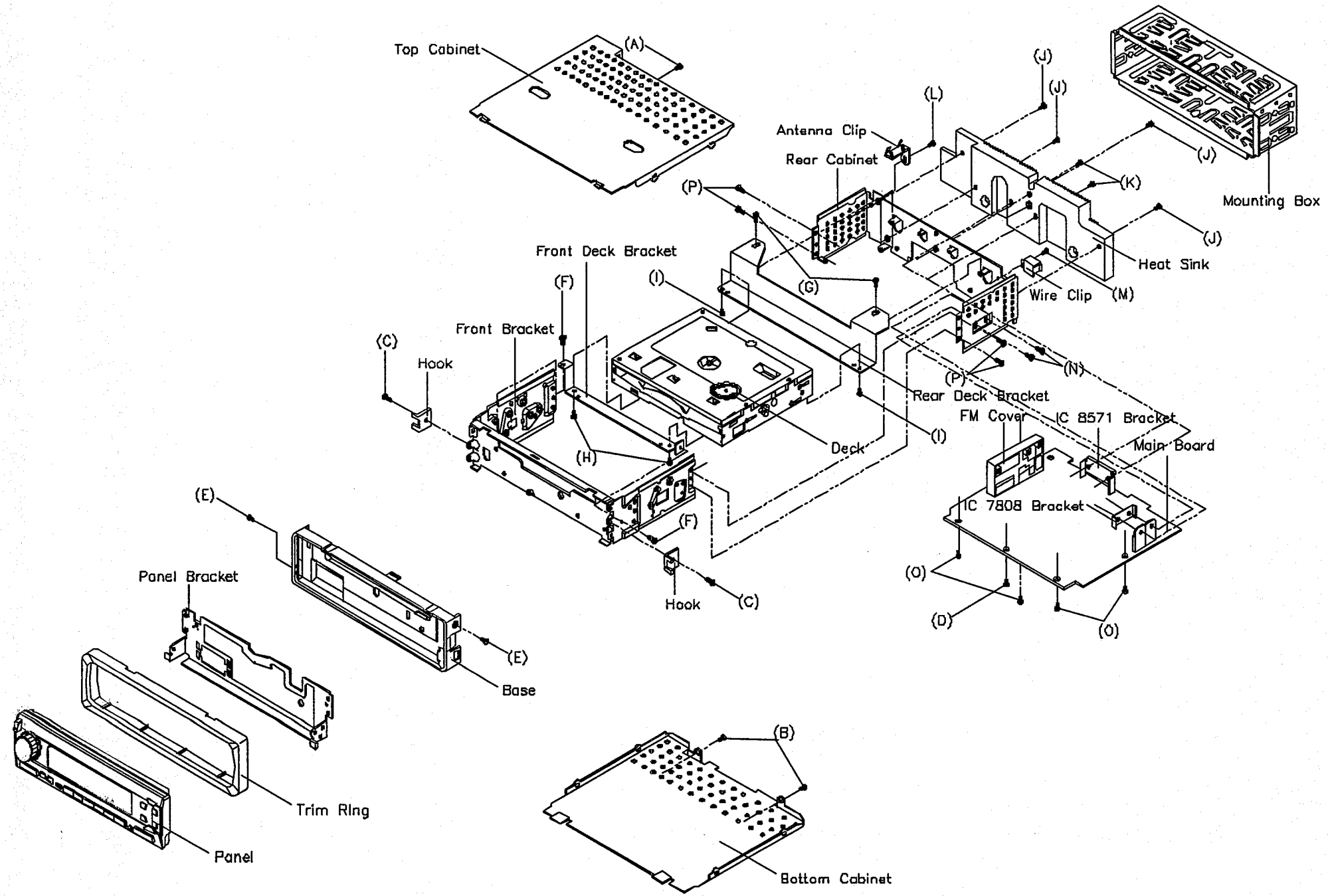
AM Alignment Using AM Signal Generator

Note: Press the radio power switch to on the radio. Signal generator output must be kept as low as possible to avoid overload and clipping.

Step	Generator Coupling	Generator	Display Setting	Adjustment	Remarks
AM Seek SENS.	Signal Generator to Antenna receptacle.	1000 kHz Input level 25 dBμV	1000 kHz	VR1	Adjust AF Stop station.

Note: The tuner module is well-adjust and adjustment is not recommended.

PRINTED CIRCUIT BOARDS


Top Cabinet
(A)
Antenna Clip
(L)
(J)
(J)
(J)
Rear Cabinet
(P)
(K)
Mounting Box
(J)
Front Deck Bracket
(F)
(I)
(G)
Heat Sink
Wire Clip
(M)
Front Bracket
(C)
Hook
(P)
(N)
Rear Deck Bracket
FM Cover
IC 8571 Bracket
Main Board
(I)
Deck
(H)
IC 7808 Bracket
(E)
(F)
(O)
Panel Bracket
Hook
(C)
(D)
(O)
(E)
Base
(B)
Trim Ring
Panel
Bottom Cabinet

FAE 347

IC 501
INSIDE (RS8802-003)
OUTSIDE (RS8802-004)

IC601
UPD16311
VFD

VFD BOARD

VFD DISPLAY

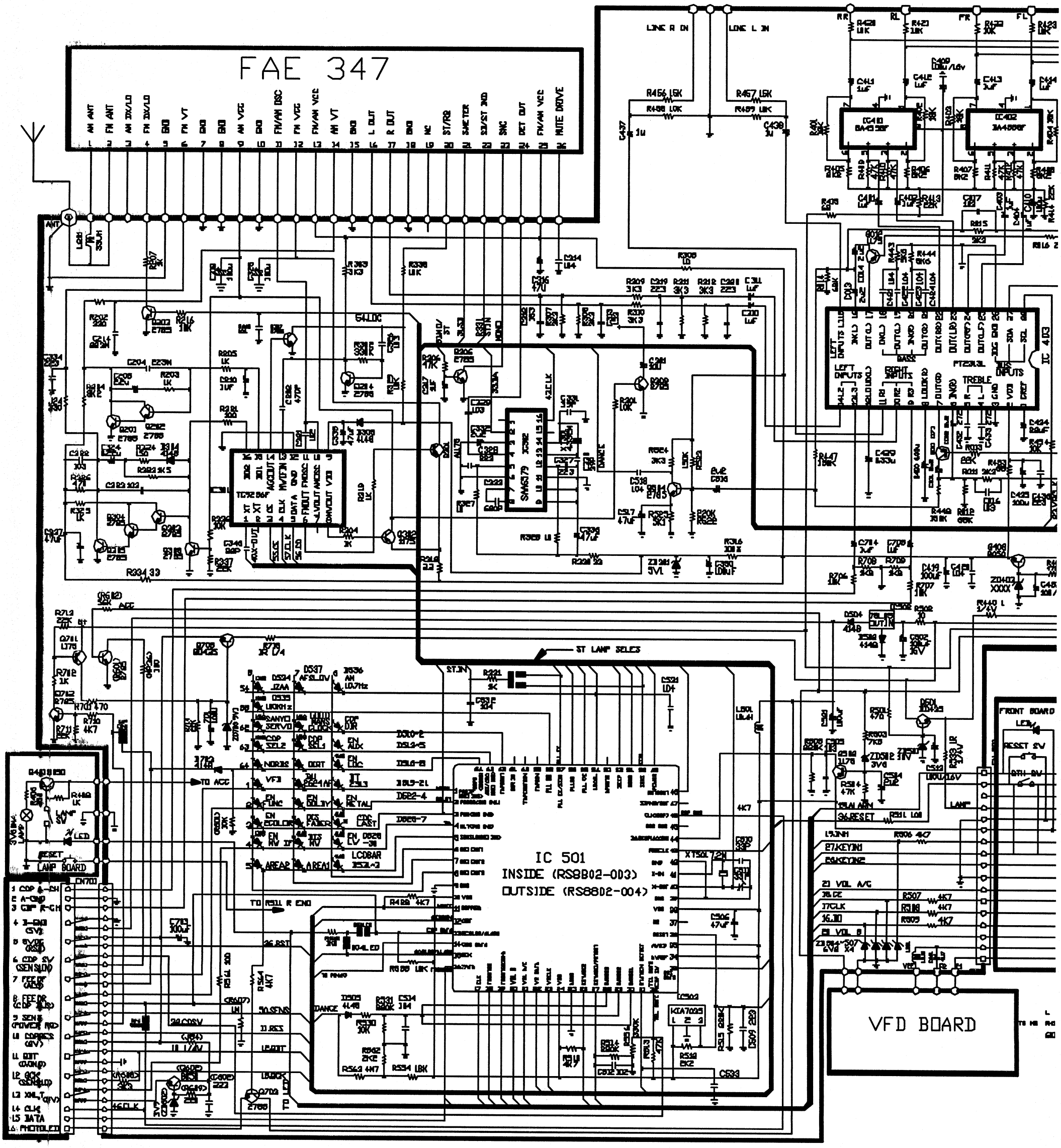
KEY BOARD

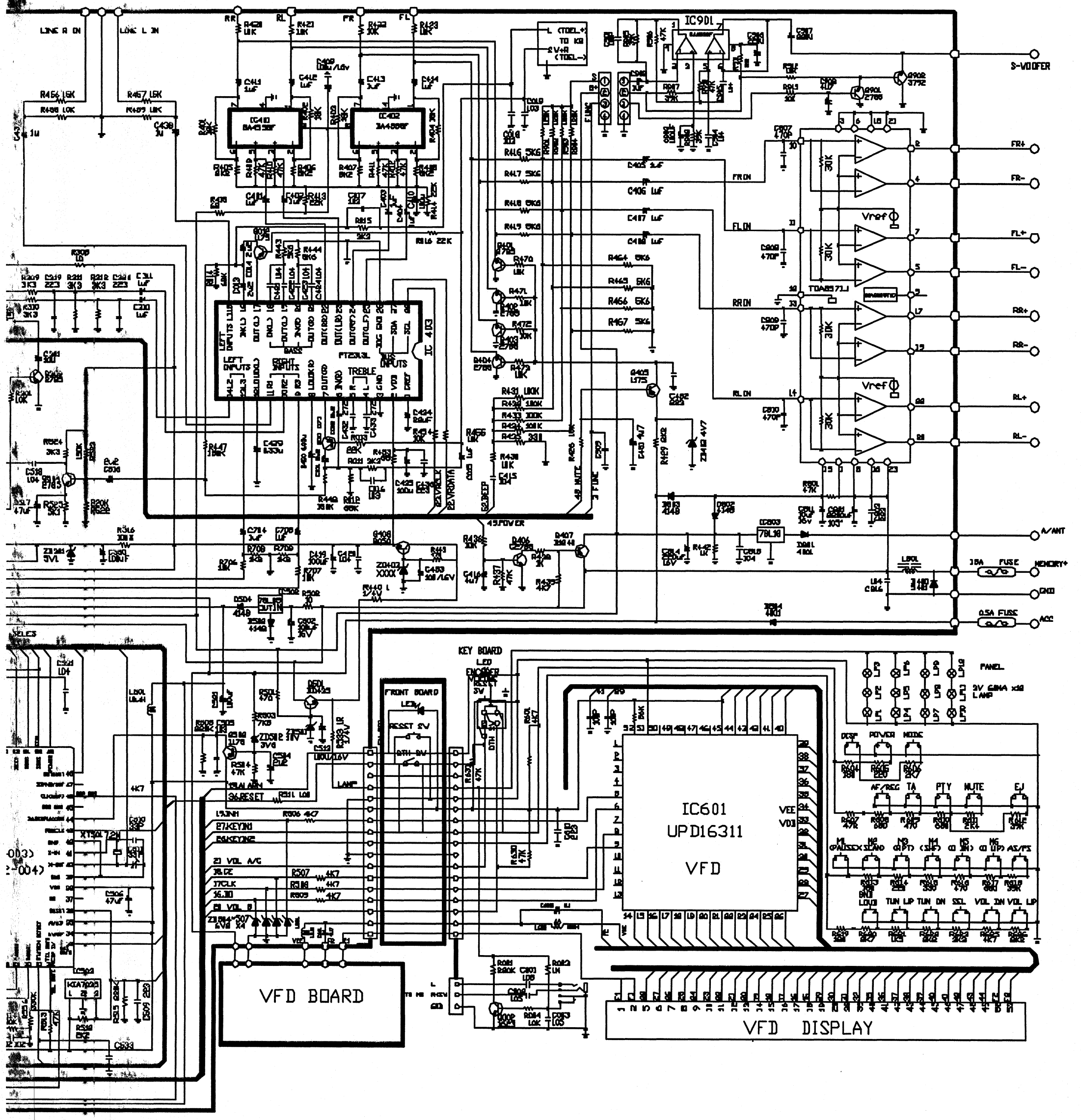
FRONT BOARD

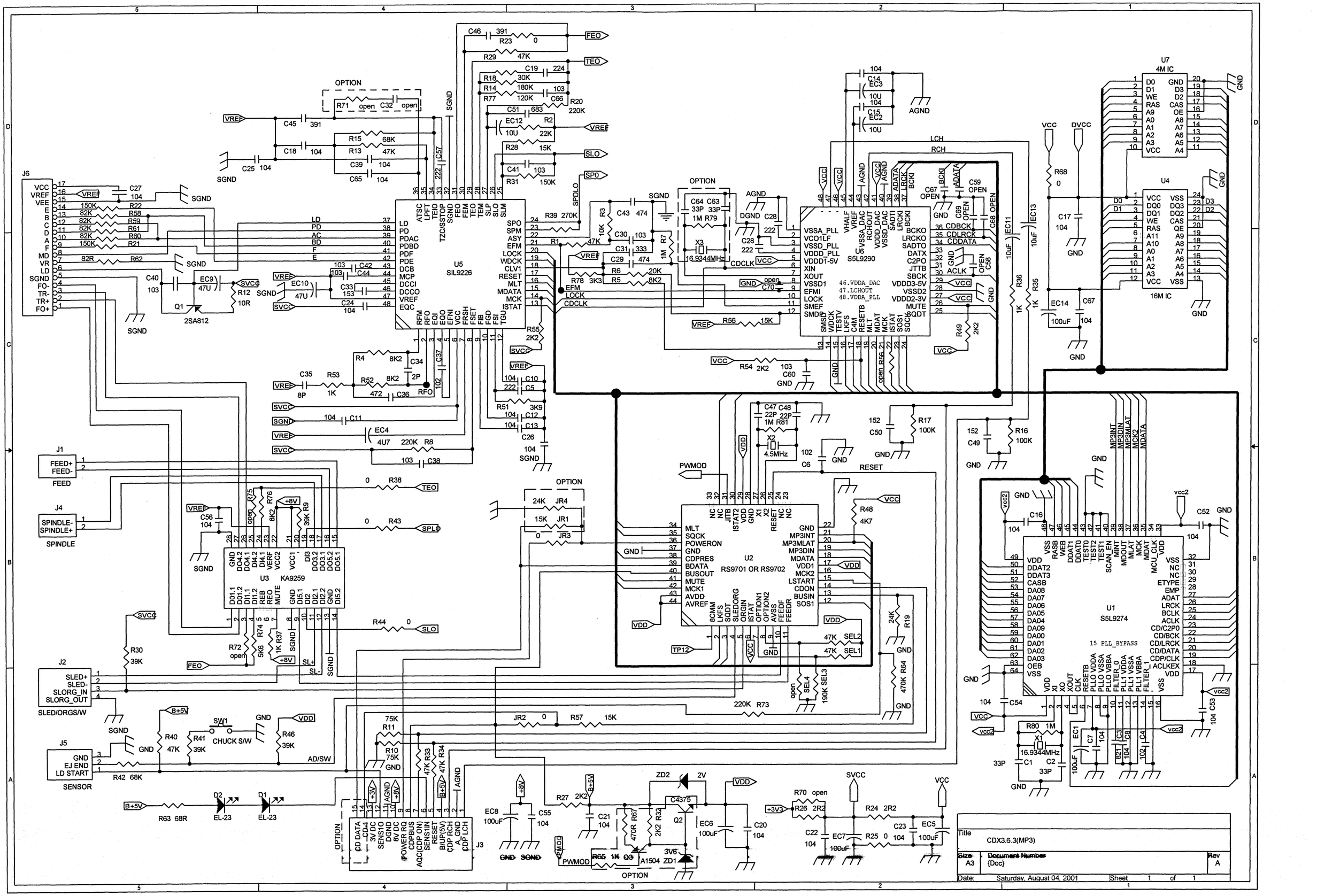
LAMP BOARD

S-WOOFER
FR+
FR-
FL+
FL-
RR+
RR-
RL+
RL-
A/ANT
MEMORY+
GND
ACC

FAE 347


AM ANT
FM ANT
AM IFX/LO
FM IFX/LO
GND
FM VT
GND
GND
AM VCC
GND
FM/AM DSC
FM VCC
FM/AM VCC
AM VT
GND
L OUT
R OUT
GND
NC
ST/RB
SAMETER
SD/ST IND
SNC
DET OUT
FM/AM VCC
MUTE DRIVE
LINE R IN
LINE L IN
R456 LBK
R457 LBK
R458 LBK
R459 LBK
C437 1u
C438 1u
IC401 BA4558F
IC402 BA4558F
IC403 PT2313L
LEFT INPUTS
RIGHT INPUTS
TREBLE
BASS
VOLUME
IC 501
INSIDE (RS8B02-003)
OUTSIDE (RS8802-004)
ST LAMP SELECT
TO ACC
TO REAR END
LAMP BOARD
RESET
LCD
VFD BOARD
FRONT BOARD
IC501
KIA7025
XTAL 7.2M
SW6579
TC9256F
AM ANT
FM ANT
AM IFX/LO
FM IFX/LO
GND
FM VT
AM VCC
FM/AM DSC
FM VCC
FM/AM VCC
AM VT
L OUT
R OUT
ST/RB
SAMETER
SD/ST IND
SNC
DET OUT
MUTE DRIVE


LINE R IN
LINE L IN
RR
RL
FR
FL
IC901
S-WOOFER
FRONT BOARD
KEY BOARD
IC601
UPD16311
VFD
VFD BOARD
VFD DISPLAY
PANEL
FRIN
RRIN
RLIN
FLIN
Vref
A/ANT
MEMORY+
ACC
GND
15A FUSE
0.5A FUSE


U5
SIL9226
U6
S5L9290
U7
4M IC
16M IC
U4
U1
S5L9274
U2
RS9701 OR RS9702
U3
KA9259
J1
FEED
J2
SLED/ORGS/W
J3
J4
SPINDLE
J5
SENSOR
J6
Q1
2SA812
SW1
CHUCK S/W
D1
EL-23
D2
EL-23
X1
16.9344MHz
X2
4.5MHz
X3
16.9344MHz
OPTION
PWMOD
RESET
SVCC
VCC
DVCC
VDD
SGND
AGND
DGND
GND
FEO
TEO
SPO
SLO
SPLO
VREF
SPDLO
LCH
RCH
Title
CDX3.6.3(MP3)
Size
A3
Document Number
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Rev
A
Date:
Saturday, August 04, 2001
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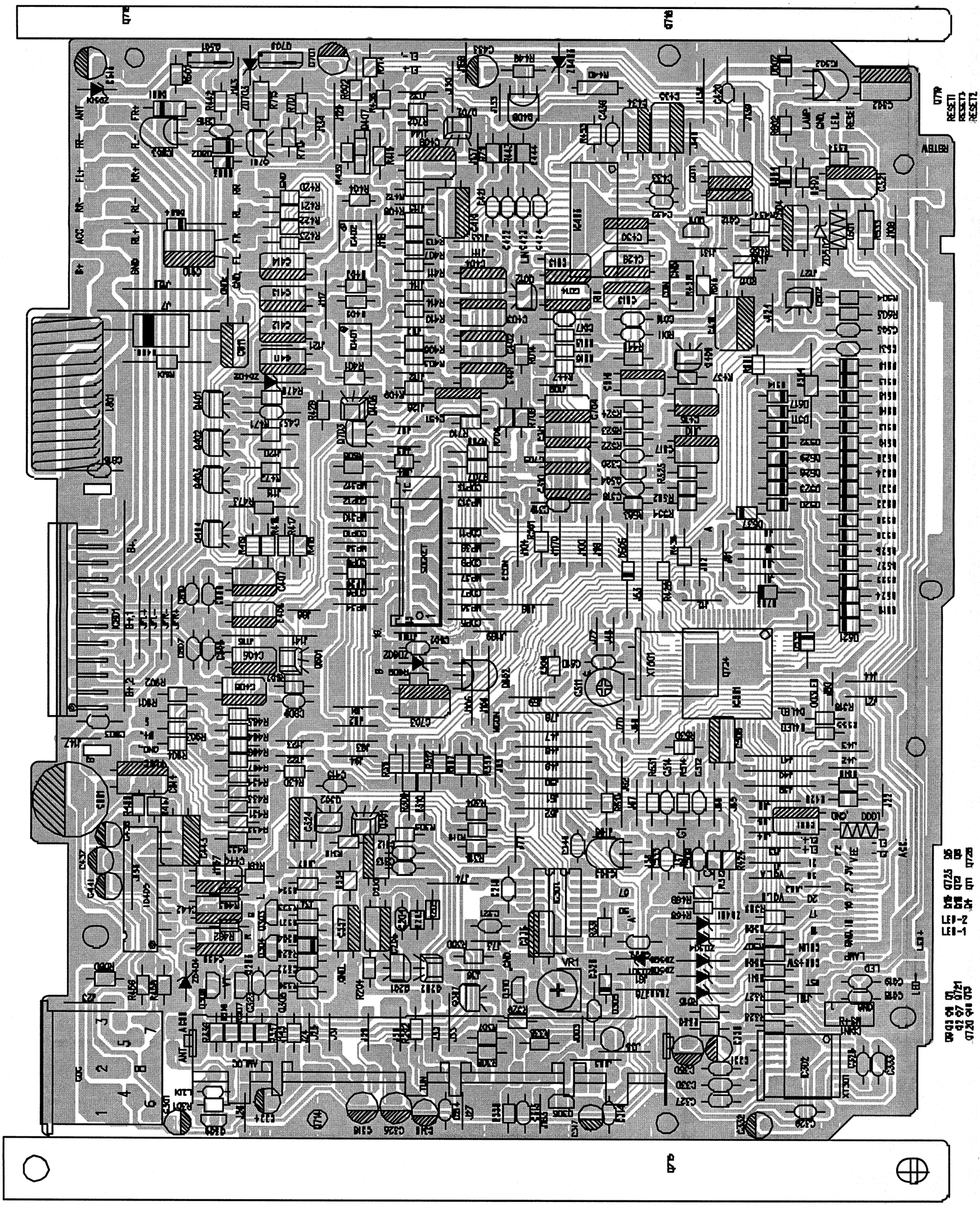
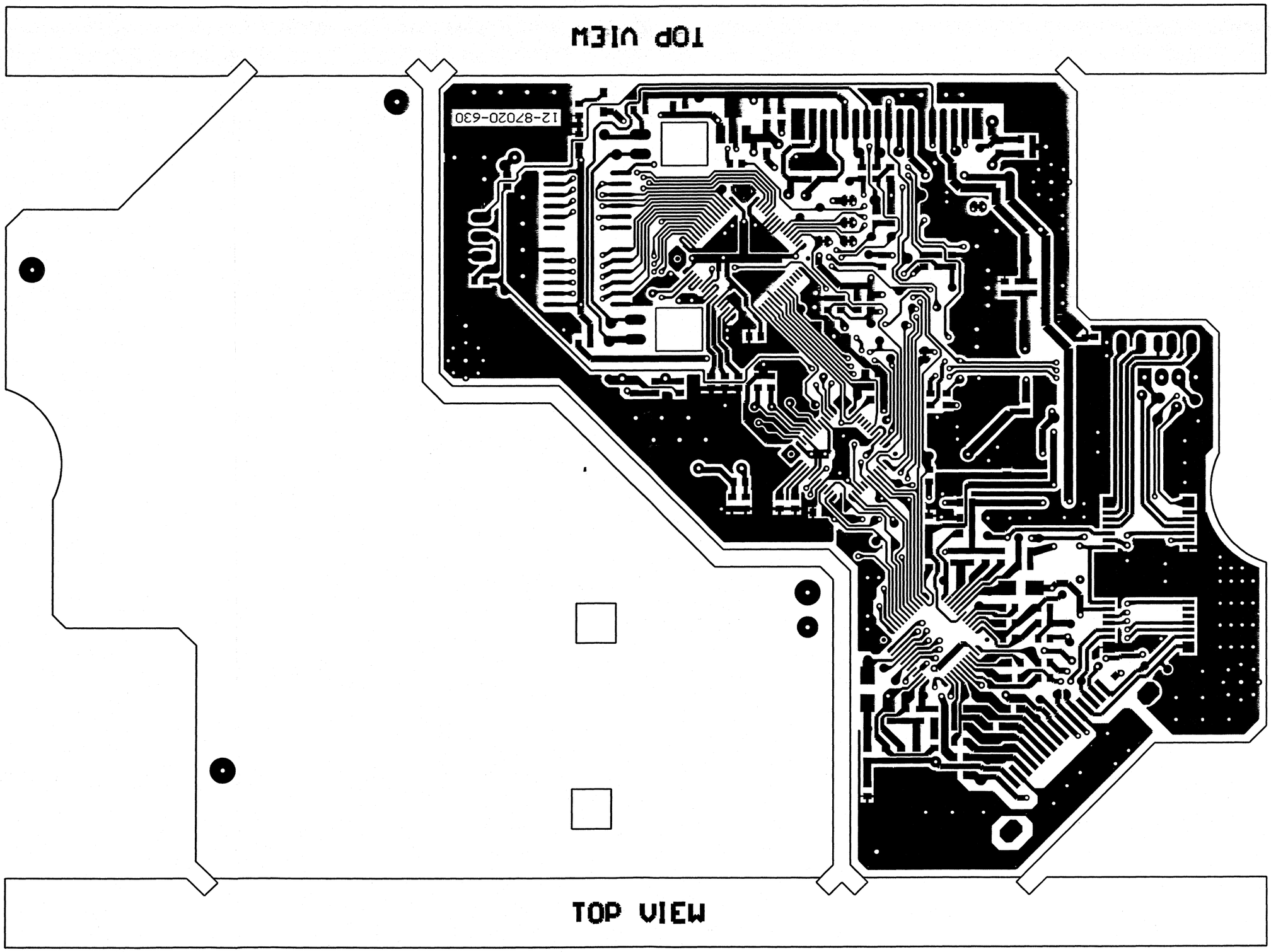
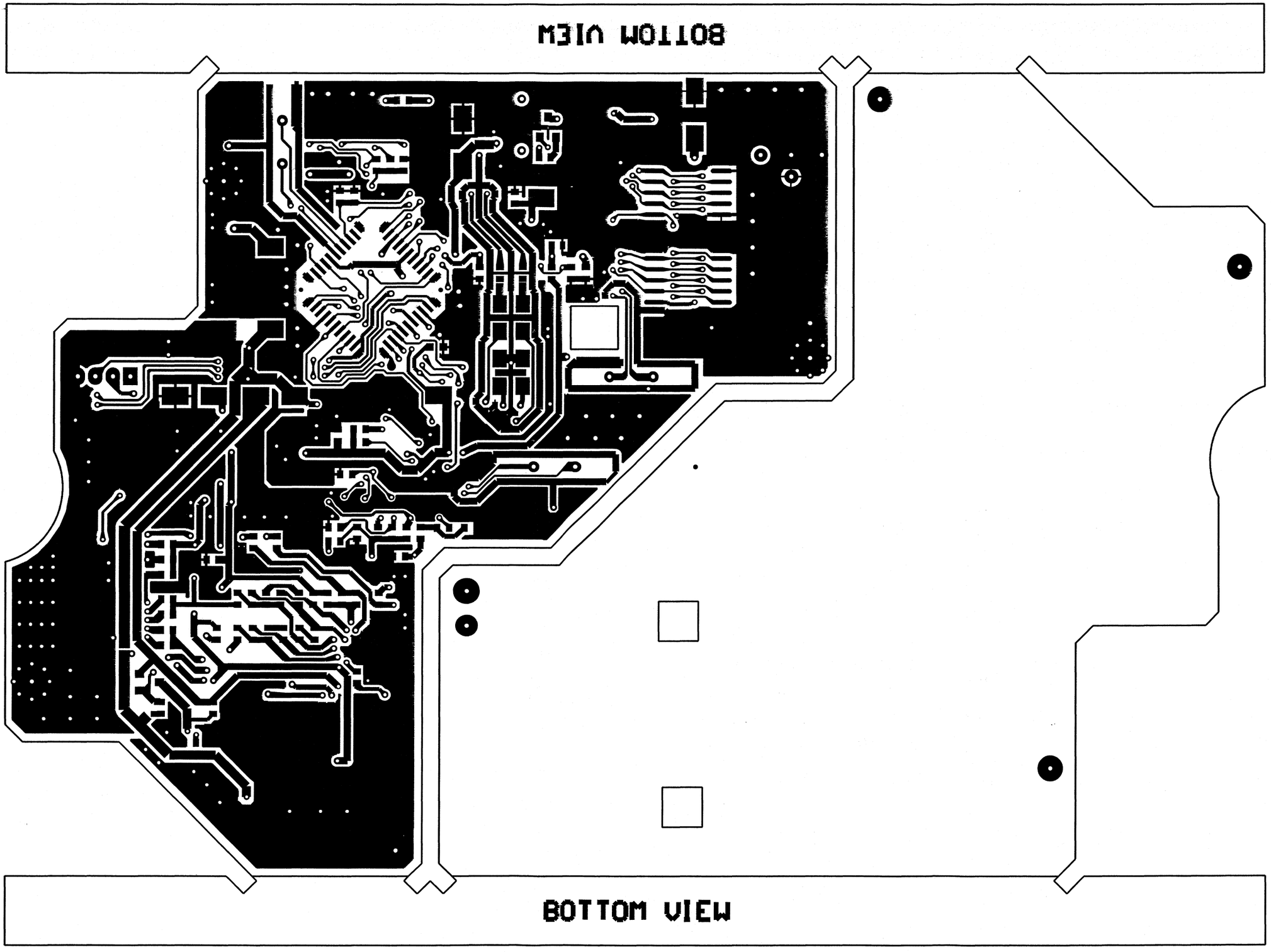
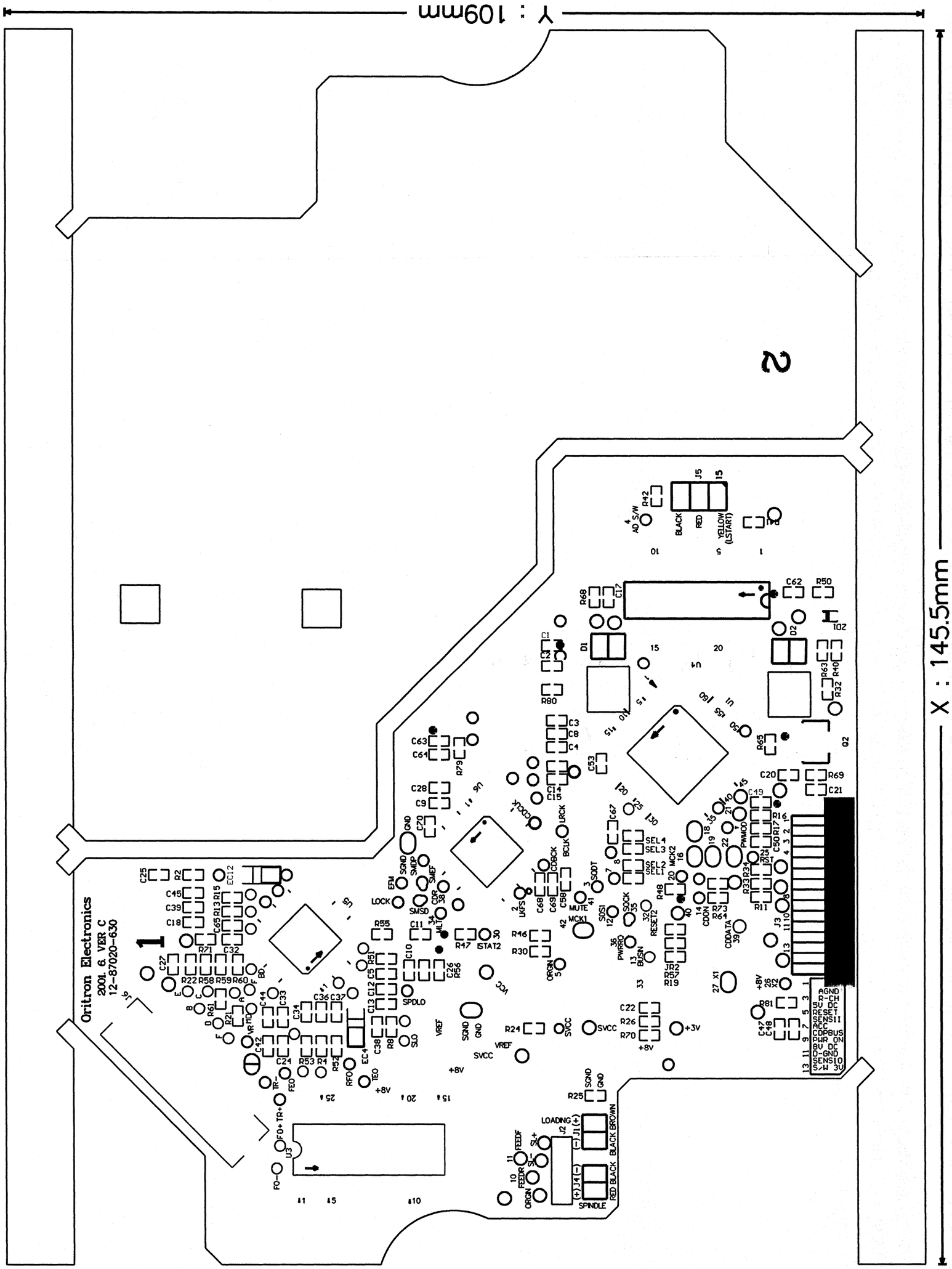
1

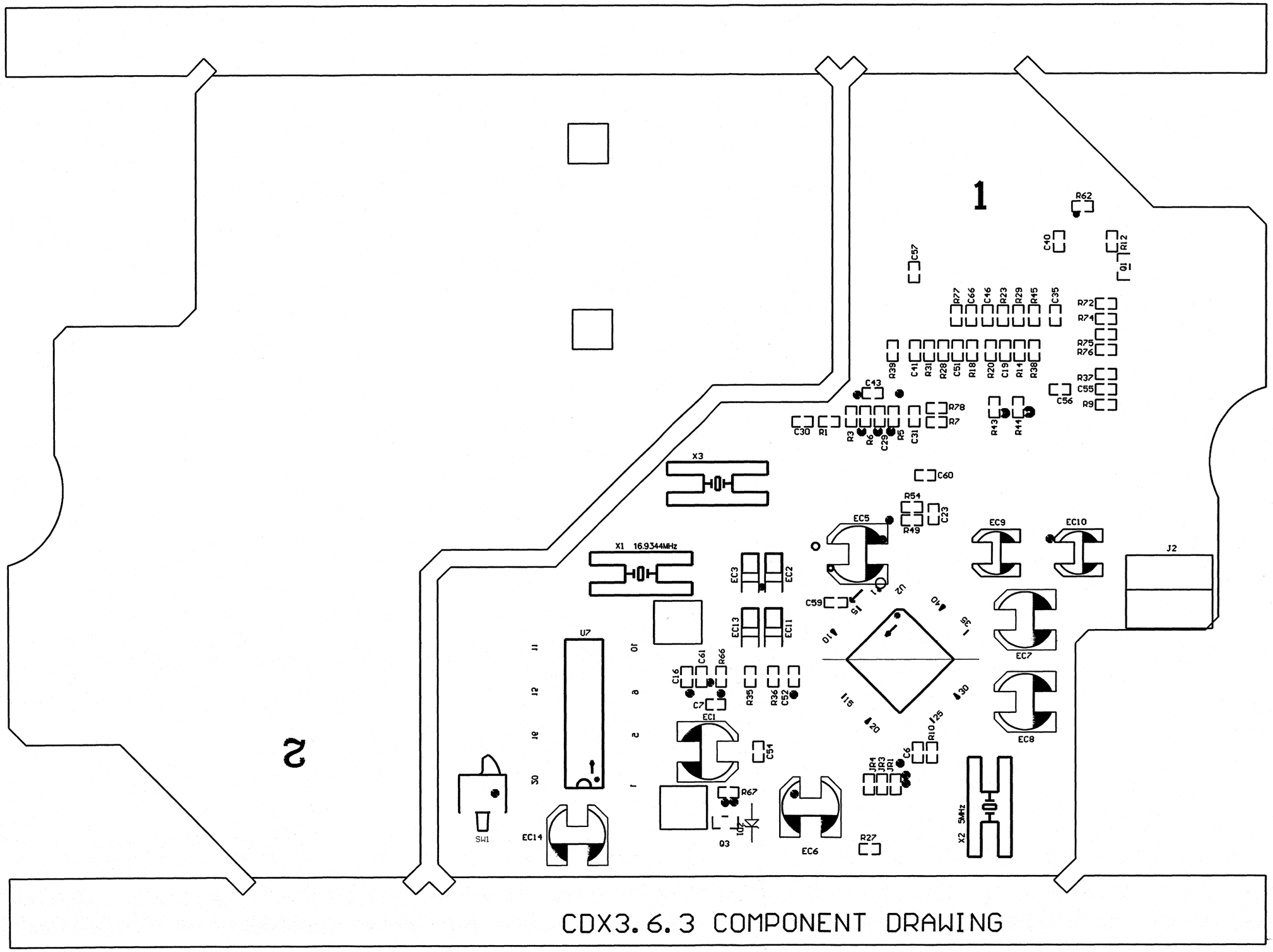



TOP VIEW
12-87020-630
TOP VIEW

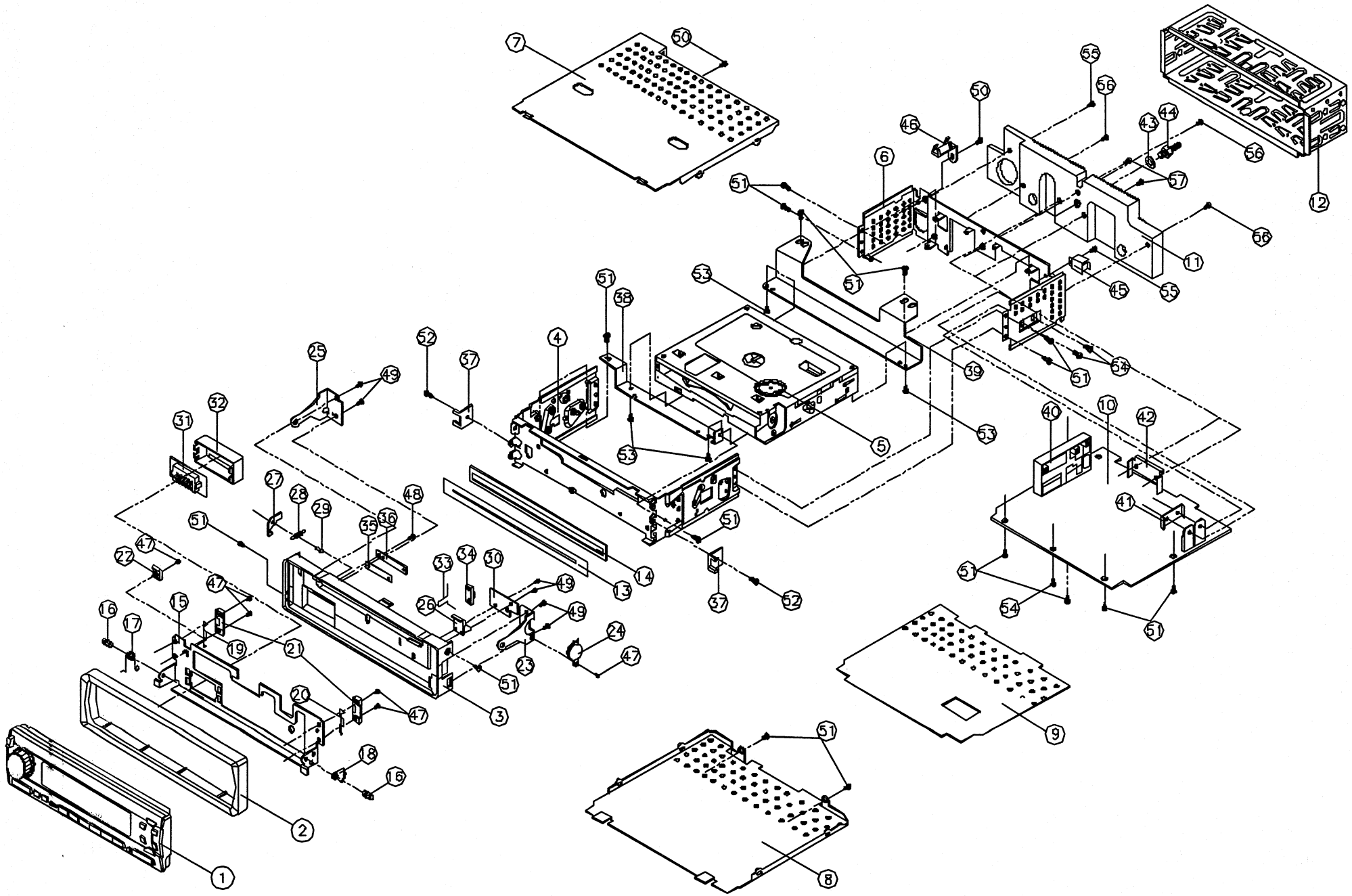


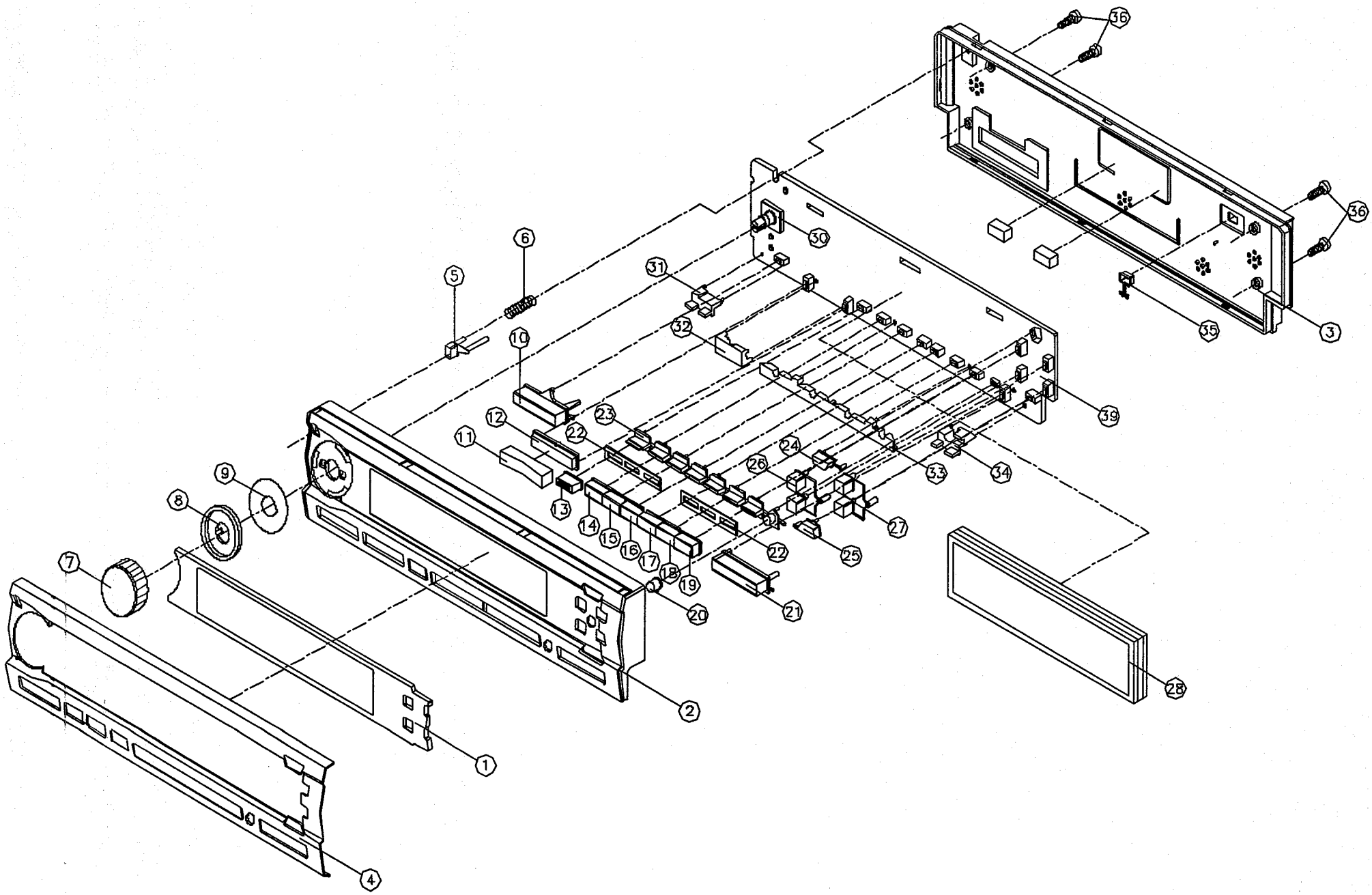
BOTTOM VIEW


Y : 109mm
X : 145.5mm
Oritron Electronics
2001. 6. VER C
12-87020-630
1
2
J5
BLACK
RED
YELLOW (LSTART)
AD_S/W
LOADING
SPINDLE
BLACK BROWN
RED BLACK
AGND
R-CH
DC
SENSE1
SENSI1
ACC
CDPBUS
GND
SENSIO
SW 3V



CDX3.6.3 COMPONENT DRAWING

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EXPLODED VIEW PARTS LIST

PANEL

Ref. No.	Description	RS Part No.	Mfr's Part No.
1	Lens; N/R CDD156X3.7.3 (S. OPC0000)		53-15654-35P
2	Panel Top For Fold Down (S. OPC0201)		51-15621-80
3	Panel Bottom For Fold Down		51-15623-00
4	M.P 156FX3.7.3 (Silver) VFD; N/Brand		61-15601-812
5	Open Knob For Fold Down (S. OPC0201)		52-15646-80
6	RE Knob Spring		36-11852-00
7	VOL Knob (S. OPC0201)		52-15643-80
8	VOL Ring (S. PMS291C)		52-15647-70
9	VOL Ring Filter		44-15603-01
10	MODE Knob (L-Up) (S. OPC0201)		52-15626-81
11	SEL/P-EQ Knob (Crystal)		52-15648-01B
12	Base For SEL Knob (S. Plum red 198C)		52-15637-50R
13	DSP Knob (S. OPC0201)		52-15638-80
14	1PAU Knob (L-Up) (S. OPC0201)		52-15627-81
15	2SCN Knob (L-Up) (S. OPC0201)		52-15628-81
16	3RPT Knob (L-Up) (S. OPC0201)		52-15629-81
17	4SHF Knob (L-Up) (S. OPC0201)		52-15630-81
18	5 Knob (L-Up) (S. OPC0201)		52-15628-82
19	6 Knob (L-Up) (S. OPC0201)		52-15631-81
20	AMS Knob (L-Up) (S. OPC0201)		52-15639-81
21	Power Knob For F. Down (L-Up) (S. OPC0201)		52-15635-81
22	1-6 PVC Sheet		35-15601-00
23	DSP/AMS Base		52-15650-00
24	Tune/Track Down Knob (L-Up) (S. OPC0201)		52-15632-81
25	Tune/Track Up Knob (L-Up) (S. OPC0201)		52-15633-81
26	BND/LOU/MONO Knob (S. OPC0201)		52-15641-80
27	LO/MU Knob (S. OPC0201)		52-15642-80
28	VFD BJ883GNK (FUTABA) CDX3.2		27-B0883-00
29	Key Board		12-01561-305
30	CD115 Rotate Encoder VOL		18-00115-00
31	MODE Back Light (S. Milk)		52-15649-01
32	SEL Back Light (S. White)		52-15653-01
33	Middle Back Light		52-15651-00
34	Right (Power) Back Light (S. White)		52-15652-01
35	EJ Knob For F. Down (L-Up) (S. OPC0000)		52-15636-31
36	Screw ∅2x8 BH/ST Black		40-12008-01

EXPLODED VIEW

CABINET

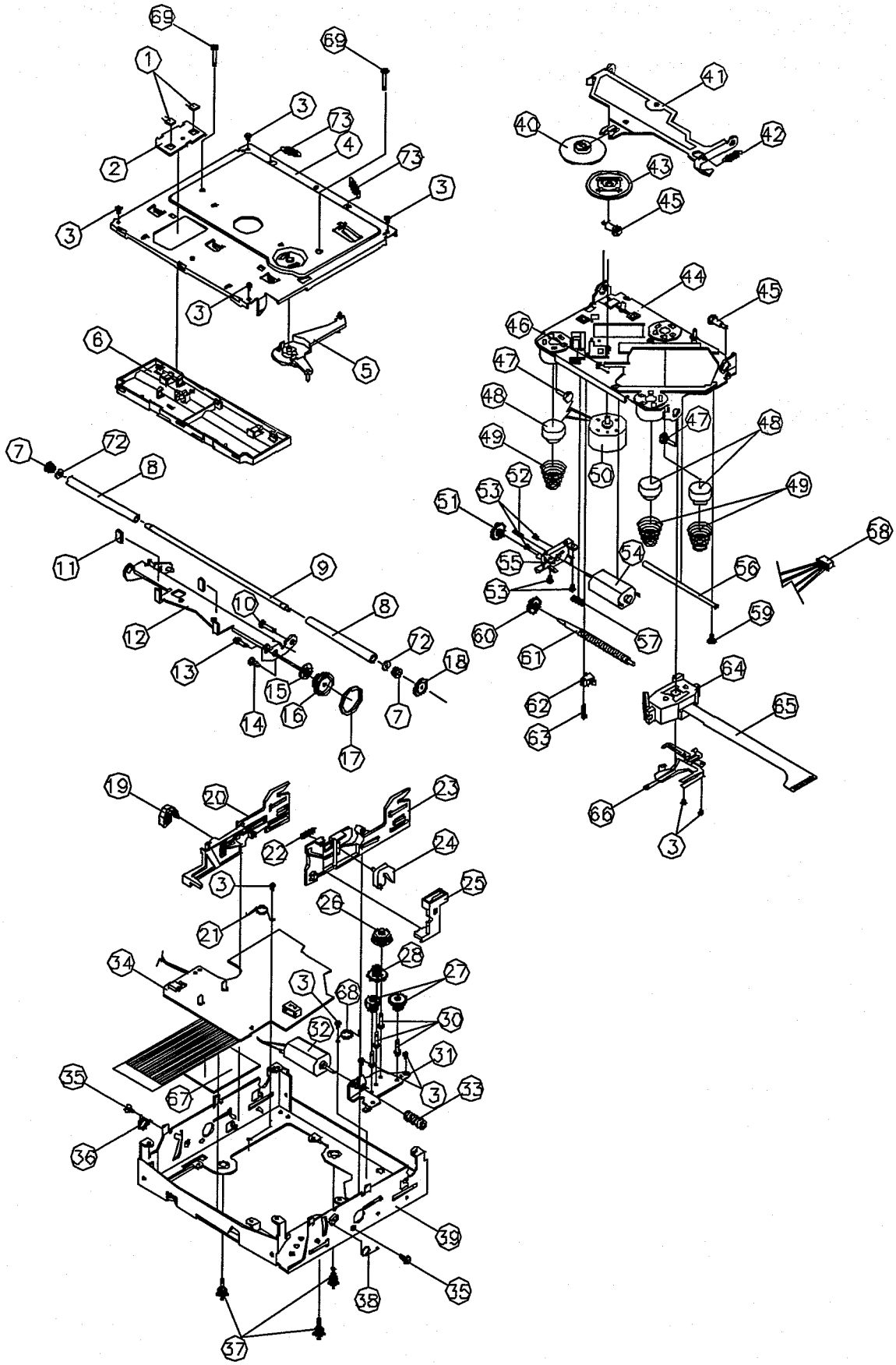
EXPLODED VIEW PARTS LIST

CABINET

Ref. No.	Description	RS Part No.	Mfr.'s Part No.
1	Panel		
2	Ring +Spray Silver		51-07122-80
3	Base/ABS (New Socket)		51-04926-00
4	Front Cabinet /CD049X3.1		61-04912-02
5	KMC CD MECHA. CDM-211S		94-00211-00
6	Rear Cabinet		61-12622-00
7	Top Cabinet		61-12620-00
8	Bottom Cabinet		61-12621-00
9	Main Fiber		35-12601-00
10	Main Board		12-01360-088
11	Heat Sink (Y) (W/O CDC)		61-12624-00
12	Mounting Box		61-68707-08
13	CD Windows Sheet		43-A3101-00
14	Shade (III)		81-69005-00
15	Panel Bracket (CD)		61-15603-00
16	Pipe		34-40201-00
17	Bracket Spring		36-02922-00
18	Gear 1 (POM)		52-40237-00
19	Panel Bracket Spring (Left)		36-04901-00
20	Panel Bracket Spring (Right)		36-04902-00
21	GIB (POM)		52-40235-00
22	Open Adaptor		52-10564-00
23	Right Bracket		39-00104-00
24	Gear 2 (POM)		52-40238-00
25	Left Bracket		39-04908-00
26	CD Back Light (PC)		52-04937-00
27	Hook (POM)		52-40236-00
28	Release Spring		36-00102-00
29	Hook Shaft		34-00101-00
30	Lamp Board		12-03201-755
31	Socket Board		12-01000-345
32	Socked Cover Nylon		52-10561-01
33	Right Spring		36-06855-01
34	Spring Bracket (PC)		52-04938-00
35	Wire FIX Fiber		35-56704-00
36	Wire FIX Sheet		39-04911-00
37	Hook		39-03207-00
38	Front Deck Bracket (X3.1)		39-03218-01
39	Rear Deck Bracket		39-12621-00
40	FM Cover		39-09305-00

Ref. No.	Description	RS Part No.	Mfr's Part No.
41	IC 7805 Bracket		39-03210-00
42	IC 8571 Bracket		39-85712-00
43	Spring Washer M5		35-50001-00
44	Screw M5 (Rear Cabinet)		34-14461-00
45	Wire Clip		39-12620-00
46	Antenna Clip (II)		39-A1528-00
47	Camera Screw M2X3 P/H (Black)		40-60203-20
48	Screw Ø2 X 4 PA/ST		40-02004-10
49	Screw Ø2 X 6 PA/ST Black		40-12006-20
50	Screw Ø2.6 X 4 PH/MS		40-02604-00
51	Screw Ø2.6X4 BH/MS		40-02604-01
52	Screw Ø2.6 X 4 KH/MS		40-02604-02
53	Screw Ø2.6 X 4 PH/TAPTITE		40-02604-03
54	Screw Ø2.6X 6 BH/MS		40-02606-00
55	Screw Ø2.6 X 8 BH/MS		40-02608-01
56	Screw Ø2.6 X 12 BH/MS		40-02612-01
57	Screw Ø3X16 PH/MS		40-03016-00

EXPLODED VIEW (DECK)



EXPLODED VIEW PARTS LIST (DECK)

Ref. No.	Description	Parts No.	Q'ty
1	SENSOR	ST-23G	2
2	SENSOR PCB	FR	1
3	SCREW	CA/H 0" TT 2*3	12
4	COVER-UPPER	SECC T1.0	1
5	LEVER DISC	POM (F20-03)	1
6	GUIDE UP	POM (F20-03)	1
7	BUSHING ROLLER	POM (F20-03)	2
8	ROLLER DISC	SLICON	2
9	SHAFT ROLLER	SUS 303	1
10	PIN ROLLER	SUM24L-NI (PLATE)	1
11	PVC CAP	PVC	2
12	B/K ROLLER	SECC T1.0	1
13	PIN PULLEY	SUM24L-NI (PLATE)	1
14	PIN IDLE	SUM24L-NI (PLATE)	1
15	GEAR IDLE	POM (F20-03)	1
16	GEAR PULLEY	POM (F20-03)	1
17	BELT PULLEY	CR-WRT	1
18	GEAR ROLLEY	POM (F20-03)	1
19	LOCKER (L)	POM (F20-03)	1
20	CAM (L)	POM (F20-03)	1
21	S/P CAM (L)	SUS304WPB	1
22	S/P RACK	SUS304WPB	1
23	CAM (R)	POM (F20-03)	1
24	LOCKER ®	POM (F20-03)	1
25	GEAR RACK	POM (F20-03)	1
26	GEAR LOAD ©	POM (F20-03)	1
27	GEAR LOAD (D)	POM (F20-03)	1
28	GEAR LOAD (B)	POM (F20-03)	1
29	GEAR LOAD (A)	POM (F20-03)	1
30	PIN LOAD	SUM24L-NI (PLATE)	4
31	B/K GEAR	SECC T1.0	1
32	MOTOR	FF-050SH-11190	1
33	GEAR WORM	POM (F20-03)	1
34	GERVO PCB ASSY	GLASS EPOXY 1.2T	1
35	SPECIAL SCREW	P/H TTS 2*2	4
36	S/P RO (L)	SUS304WPB	1
37	SUPPORT DAMPER	POM (F20-03)	3
38	S/P RO ®	SUS304WPB	1
39	CHASSIS MAIN	SEEC T1.0	1

EXPLODED VIEW PARTS LIST – CONTINUED (DECK)

Ref. No.	Description	Parts No.	Q'ty
40	CLAMP DISC	POM (F20-03)	1
41	HOLD CLAMPER	SECC T1.0	1
42	S/P CLAMPER	SUS304WPB	1
43	TURN TABLE	ABS G/F 20%	1
44	BASE PU	POM (F20-03)	1
45	PIN SIDE (A)	SUM24L-NI (PLATE)	2
46	SCREW	CA/H 0" M/S 1.7*2.5	2
47	PIN SIDE (B)	SUM24L-NI(PLATE)	2
48	DAMPER	BUTHYL	1
49	S/P BASE	SUS304WPB	2
50	MOTOR	RF-400CA-12265	1
51	GEAR PU (B)	HYTRELL 5526	1
52	GEAR PU (A)	POM (F20-03)	1
53	SCREW	CA/H 0" M/S 2*2	6
54	MOTOR	FF-050SH-11190	1
55	HOUSING GEAR	POM (F20-03)	1
56	SHAFT PU	KNN11 (PCD18)	1
57	SCREW	R/H (W/W) TTB2*5	1
58	4P CONT WIRE	1007 #28	1
59	SPRING TENSION	SUS304WPB	1
60	GEAR PU ©	POM (F20-03)	1
61	LEAD SCREW	BSBM	1
62	SWITCH	SW-110	1
63	SCREW	B/H TTB1.7*8	1
64	PICK UP	SF-C99	1
65	FPC WIRE	POLY AMIDE	1
66	SPRING PU	SUS T0.2	1
67	FIBER PAPER		1
68	S/P CAM ®	0.55	1
69	TRANSIT SCREW	4.5*18	2
70	INSULATOR COVER	PE	1
71	SWITCH	SW-111	1
72	WASHER PE	PE	2
73	S/P BASE ®	SUS304WPB	2

SCHEMATIC DIAGRAM (MAIN)

SCHEMATIC DIAGRAM (SERVO)

ELECTRICAL PARTS LIST

Ref. No.	Part No.	Description	Q'ty
PC BOARD ASSY, MAIN BOARD			
Q501,705	01-00435-00	TRANSISTOR BD435 "SAM SUNG"	2
Q301,405,502,701	01-01175-00	TRANSISTOR 2SA1175-FF	4
Q407	01-01240-00	TRANSISTOR B1240	1
Q203,303~7,401~4/6,504,702	01-02785-00	TRANSISTOR 2SC2785-FF	13
IC502	01-07805-00	IC-REGULATOR 78L05	1
D801,804	02-04001-00A	DIODE IN4001 (TAPPING)	2
D513/4,502/4/5,535,304/5,802/3,533/5/6,703	02-04148-00A	DIODE 1N-4148 (TAPPING)	14
D400	02-05401-00	DIODE IN5401	1
ZD502	02-50036-00A	ZENER DIODE 3.6V 0.5W AT.	1
ZD402	02-50047-00A	ZENER DIODE 4.7V 0.5W AT.	1
ZD301	02-50051-00A	ZENER DIODE 5.1V 0.5W AT.	1
ZD504~7	02-50068-00A	ZENER DIODE 6.8V 0.5W AT.	4
ZD703	02-50091-00A	ZENER DIODE 9.1V 0.5W AT.	1
ZD501	02-50100-00	ZENER DIODE 10V 0.5W	1
IC403	03-02313-00	I.C. PT2313L	1
IC401/2	03-04558-06	IC KIA-4558F	2
IC302	03-06579-00	IC. SAA-6579T	1
IC503	03-07035-00	IC KIA7035P	1
IC801	03-07377-00	I.C. TDA-7377 (PWR)	1
IC803	03-07818-00	REGULATOR LC-78L18	1
IC501	03-08802-004	IC RS8802-004	1
IC301	03-09257-00	I.C. TC 9256P	1
XT501	04-00072-00	CRYSTAL HC-49/US 7.2MHZ	1
XT301	04-00433-00M	C. 4.332SMHz HC-49U 30PPM 22PF	1
C510/1	05-00330-06	CER CAP 33P NPO ±5%	2
C330/1	05-00390-06	CER CAP 39P NPO ±5%	2
C321,512	05-05102-00A	AXIAL CER CAP 1000PF ±20% TP.	2
C322/3/9,505,326	05-05103-00A	AXIAL CER CAP 0.01μF+80/-20% TP.	5
C314,420/15,514/8,532,815/6,215,531	05-05104-00A	AXIAL CER CAP 0.1μF +80/-20% TP.	10
C319/20,312/3	05-05153-00A	A. CER CAP 0.015μF +80/-20% TP.	4
C346	05-05220-00A	AXIAL CER CAP 22PF ±5%	1
C327/8,334,436,452,509,803	05-05223-00A	A. CER CAP 0.022μF +80/-20% TP.	7
C432/3	05-05272-00A	AXIAL CER CAP 2700PF ±20% TP	2
C807~10	05-05471-00A	AXIAL CER CAP 470PF ±10% TP.	4
C333	05-05681-00A	AXIAL CER CAP 680PF ± 10% TP.	1
C421~4	05-06164-82	AXIAL CER CAP 0.1μF X7R ±10% TP.	4
C350,410/9,435,521,701,703	06-10107-01	E. CAP 100μF 10V (Ø5X7MM MINI)	7
C912/3	06-10108-01	E. CAP 1000μF 10V (Ø8X14MM)	2
C335~7,316,506,517	06-10476-01	E. CAP 47μF 10V (Ø4X7 MINI)	6
C310/11/17,401~8,411~4,704/5	06-16105-01	E. CAP 220μF 10V Ø6MM	17
C811	06-16106-01	E. CAP 10μF 10V (Ø4X7MM)	1

ELECTRICAL PARTS LIST - CONTINUED

Ref. No.	Part No.	Description	Q'ty
C409,502,513	06-16107-01	E. CAP 100μF 10V (Ø6.3X7MM)	3
C011/4,332,504,516	06-16225-01	E. CAP 2.2μF 16V Ø4X7	5
C434	06-16226-01	E. CAP 22μF 16V (Ø4X7MM)	1
C814	06-16227-01	E. CAP 220μF 16V (Ø6.3X12MM)	1
C801	06-16338-00S	E. CAP 3300μF 16V 105°C	1
C451,416	06-16475-01	E. CAP 4.7μF 16V (Ø4X7MM)	2
C911	06-16476-01	E. CAP 47μF 16V (Ø5X7MM)	1
C324	06-50224-01	E. CAP 0.22μF 50V (Ø4X7MM) MINI	1
C429,430	06-50334-01	E. CAP 0.33μF 50V (Ø4X7MM)	2
R715,440,533	07-05010-00	RES. 1Ω 1/4W	3
R318	07-05022-16A	RES. 2.2Ω 1/16W (TAPPING)	1
R305,502,327/8	07-05100-16A	RES. 10Ω 1/16W (TAPPING)	4
R511,321,316	07-05101-16A	RES. 100Ω 1/16W (TAPPING)	3
R319/31,438/42,325,702	07-05102-16A	RES. 1kΩ 1/16W (TAPPING)	6
R216,706/7,426/30/36,454/5,47 0~3,530,555,329,338	07-05103-16A	RES. 10kΩ 1/16W(TAPPING)	16
R431~4	07-05104-16A	RES. 100kΩ 1/16W (TAPPING)	4
R324	07-05151-16A	RES. 150Ω 1/16W (TAPPING)	1
R323	07-05152-16A	RES. 1.5kΩ 1/16W (TAPPING)	1
R523,447/8	07-05154-16A	RES. 150kΩ 1/16W (TAPPING)	3
R708/9,518	07-05182-16A	RES. 1.8kΩ 1/16W (TAPPING)	3
R554	07-05183-16A	RES. 18kΩ 1/16W (TAPPING)	1
R501	07-05221-16A	RES. 220Ω 1/16W (TAPPING)	1
R429,512,562	07-05222-16A	RES. 2.2kΩ 1/16W (TAPPING)	3
R413/4,711/3/4	07-05223-16A	RES. 22kΩ 1/16W (TAPPING)	5
R505/15/22/14	07-05224-16A	RES. 220kΩ 1/16W (TAPPING)	4
R334,330	07-05330-16A	RES. 33Ω 1/16W (TAPPING)	2
R435,J24	07-05331-16A	RES. 330Ω 1/16W (TAPPING)	2
R307~10,524	07-05332-16A	RES. 3.3kΩ 1/16W (TAPPING)	5
R556	07-05334-16A	RES. 330kΩ 1/16W (TAPPING)	1
R701,326	07-05471-16A	RES. 470Ω 1/16W (TAPPING)	2
R428,439,506~10,710	07-05472-16A	RES. 4.7kΩ 1/16W (TAPPING)	8
R306,409~12,437,504,801,	07-05473-16A	RES. 47kΩ 1/16W (TAPPING)	9
R563	07-05475-16	RES. 4.7MΩ 1/16W ±5%	1
R525	07-05512-16A	RES. 5.1kΩ 1/16W (TAPPING)	1
R311/2,416~9,443/4	07-05562-16A	RES. 5.6kΩ 1/16W (TAPPING)	8
R453,415	07-05680-16A	RES. 68Ω 1/16W (TAPPING)	2
R503	07-05752-16A	RES. 7.5kΩ 1/16W (TAPPING)	1
R405~8	07-05822-16A	RES. 8.2kΩ 1/16W (TAPPING)	4
R531	07-05824-16A	RES. 820kΩ 1/16W (TAPPING)	1
L501	09-70100-01	MICRO INDUCTOR 10UH AXIAL TYPE	1
MB	12-01360-008	PCB CDDX3.7.3 VMB 188X145	1
L801	15-27014-01	RING COIL Ø27X14MM V-TYPE	1

ELECTRICAL PARTS LIST - CONTINUED

Ref. No.	Part No.	Description	Q'ty
PC BOARD ASSY, FM TUNER BOARD			
Q104/6	01-02785-00C	TRANSISTOR 2SC2785 "NEC"	2
Q102	01-03875-07	TRANSISTOR 2SC3875G	1
D107	02-04148-00	DIODE IN-4148	1
D106	02-04148-02	DIODE CHIP PLS4148 1206 ROHM	1
IC101	03-01140-00	I.C. LA-1140	1
IC102	03-03375-00	I.C. LA-3375	1
C136	05-03102-10	CHIP CER CAP 1000P 50V K Y5P TA	1
C115/6	05-03223-10	CHIP CAP CM21X7R223K25AT	2
C122	05-05103-10H	AXIAL CER UP050B103K-B-B7 ±10%	1
C117	05-05330-00H	AXIAL UP050SL 330J-B-B (±5%)	1
C126	05-05333-00	AXIAL CER CAP 0.33µF +80/-20%	1
C123	05-09102-11	POLY CAP 1000PF ±5%	1
C121	05-63102-01	CHIP 1000PF ±10% X7R 0603 SMT	1
C135,001/2	05-63103-01	CHIP 0.01µF ±10% X7R 0603 SMT	3
C109,129,133	05-63104-01	CHIP 0.1µF ±10% X7R 0603 SMT	3
C108/9,111/2/8	05-63223-01	CHIP 0.022µF ±10% X7R 0603 SMT	5
C130	05-63332-01	CHIP 3300PF ±10% X7R 0603 SMT	1
C114	06-10107-01	E. CAP 100µF 10V (Ø5X7MM MINI)	1
C134	06-10227-01	E. CAP 220µF 10V (Ø6MM MINI)	1
C102	06-16106-01	E. CAP 10µF 16V (Ø4X7MM)	1
C113,128,132	06-16475-01	E. CAP 4.7µF 16V (Ø4X7MM)	3
C110,125/7,131	06-50105-01	E. CAP 1µF 50V (Ø4X7MM)	4
C124	06-50335-02C	E. CAP 3.3µF 50V (Ø3X5MM)	1
J01~5	07-05000-54	CHIP RES. 0Ω 1/10W	5
R114	07-05123-16	RES. 12kΩ 1/16W	1
V104	07-05203-16	RES. 20kΩ 1/16W ±5%	1
VR106	07-05392-16	RES. 3.9kΩ 1/16W	1
R119	07-05472-16	RES. 4.7kΩ 1/16W	1
R116/8	07-05473-16	RES. 47kΩ 1/16W	2
R136	07-05824-54	CHIP RES. 820kΩ 1/10W	1
J5~15,R152	07-63000-00	CHIP RES. 0Ω 0603 SMT	12
R128,J16	07-63100-00	CHIP RES. 10Ω ±5% 0603 SMT	2
R109,133,108,129	07-63102-00	CHIP RES. 1kΩ ±5% 0603 SMT	4
R103,149,117,112	07-63103-00	CHIP RES. 10kΩ ±5% 0603 SMT	4
R113,132	07-63153-00	CHIP RES. 15kΩ ±5% 0603 SMT	2
R150	07-63222-00	CHIP RES. 2.2kΩ ±5% 0603 SMT	1
R115	07-63223-00	CHIP RES. 220kΩ ±5% 0603 SMT	1
R120	07-03224-00	CHIP RES. 22kΩ ±5% 0603 SMT	1
R107,110,134	07-63331-00	CHIP RES. 330Ω ±5% 0603 SMT	3
R106,135	07-63392-00	CHIP RES. 3.9kΩ ±5% 0603 SMT	2
R111	07-63473-00	CHIP RES. 47kΩ ±5% 0603 SMT	1
R120	07-63683-00	CHIP RES. 68kΩ ±5% 0603 SMT	1

ELECTRICAL PARTS LIST - CONTINUED

Ref. No.	Part No.	Description	Q'ty
R127	07-63752-00	CHIP RES. 7.5kΩ ±5% 0603 SMT	1
	08-70174-01	TFT 10.7MHZ H=7.5MM	1
CF101/2	09-10710-01	FILTER SEF 10.7MJ 'MURATA' ±30K	2
	12-01140-135	LA1140 TUNER BOARD 74X40X1.2	1
VR103	17-30103-06S	SEMI-FIXED EVND2AA03B14 (10KB)	1
VR107	17-30104-06S	SEMI-FIXED EVND2AA03B15 3V	1
VR105	17-30502-06S	SEMI-FIXED EVND2AA03B53	1
VR101	17-30503-06S	SEMI-FIXED EVND2AA03B54 (50KΩ)	1
PC BOARD ASSY, AM TUNER BOARD			
Q302	01-01175-00	TRANSISTOR 2SA1175-FF	1
Q202/1,308,310	01-02785-00	TRANSISTOR 2SC2785-FF	4
D528	02-04148-00A	DIODE IN-4148 AT. (TAPPING)	4
C214,204	05-05223-00A	A.CER CAP 0.022μF +80/-20% TP.	2
C205	05-16225-00	TAN CAP 2.2μF 16V	1
C318	06-10107-01	E. CAP 100μF 10V (Ø5X7MM MINI)	1
C210	06-16105-01	E. CAP 1μF 16V (Ø4X7MM)	1
R203/5,304	07-05102-16A	RES. 1kO 1/16W (TAPPING)	3
R336	07-05103-16A	RES. 10kO 1/16W (TAPPING)	1
R337,350	07-05223-16A	RES. 22kO 1/16W (TAPPING)	2
R202	07-05331-16A	RES. 330O 1/16W (TAPPING)	1
R204	07-05822-16A	RES. 8.2kO 1/16W (TAPPING)	1
L201	09-70330-01	MICRO INDUCTOR 33μH AXIAL TYPE	1
VR1	17-31203-06T	SEMI-FIXED SC-065 B20K Ø6MM 3H	1
PC BOARD ASSY, KEY BOARD			
LED1	02-01112-00F	SMD LED PG1112H GREEN "STANLEY"	1
LP1~11	02-30553-60T	P.LAMP AA 3V 60MA Ø3X5.5 K.T.	11
IC601	03-16311-00	IC μPD16311GC (VFD DRIVER)	1
C604/5	05-03105-10M	CHIP CAP KC20E1C105M-TS	2
C606~10/12~15	05-63101-00	CHIP 100PμF ±5% NPO 0603 SMT	9
C601	05-63104-01	CHIP 0.1μF ± 10% X7R 0603 SMT	1
C616	05-63221-00	CHIP 220PF ± 5% NPO 0603 SMT	1
R651~4	07-63101-00	CHIP RES 100? ±5% 0603 SMT	4
R609,621,655/6	07-63102-00	CHIP RES 1k? ±5% 0603 SMT	4
R646~650	07-63103-00	CHIP RES. 10kΩ ± 5% 0603 SMT	5
639/40/41	07-63151-00	CHIP RES 150? ±5% 0603 SMT	3
R610/22	07-63152-00	CHIP RES. 1.5kΩ ±5% 0603 SMT	2
R604/16	07-63181-00	CHIP RES. 180Ω ± 5% 0603 SMT	2
R627/15	07-63183-00	CHIP RES 18k?	2
R605,61	07-63221-00	CHIP RES. 220Ω ± 5% 0603 SMT	2
R611/23	07-63222-00	CHIP RES. 2.2kΩ ± 5% 0603 SMT	2
R606/18	07-63331-00	CHIP RES. 330Ω ± 5% 0603 SMT	2
R612/24	07-63332-00	CHIP RES. 3.3kΩ ± 5% 0603 SMT	2
R619,607	07-63471-00	CHIP RES. 470Ω ± 5% 0603 SMT	2

ELECTRICAL PARTS LIST - CONTINUED

Ref. No.	Part No.	Description	Q'ty
R613,625,601	07-63472-00	CHIP RES. 4.7kΩ ±5% 0603 SMT	3
R643~4	07-63473-00	CHIP RES 47k? ±5% 0603 SMT	2
R603	07-63563-00	CHIP RES. 56kΩ ±5% 0603 SMT	1
R620,608	07-63681-00	CHIP RES. 680Ω ±5% 0603 SMT	2
R614,626	07-63822-00	CHIP RES. 8.2kΩ ±5% 0603 SMT	2
L601	09-70100-01	MICRO INDUCTOR 10UH AXIAL TYPE	1
KB	12-01561-305	PCB CD-F156VFD KB 159X41.8	1
	16-01107-00K	TACT SW. DCT/1101 4.3MM 2PIN	17
SW	16-01140-04	TACT SW. KPS-1107SW H=2.5 KIE	2
PC BOARD ASSY, SDK/CD SERVO BOARD			
Q1	01-00812-00	TR. 2SA812	1
Q601	01-02785-00	TRANSISTOR 2SC2785-FF	1
Q602	01-08050-03	TR. 8050C TO-92-B	1
D1,2	02-00144-00	IR LED MIE 144A1MC	2
	02-04148-00	DIODE IN-4148	1
ZD2	02-50020-00	ZENER DIODE 2V 0.5W	1
ZD602	02-50039-00A	ZENER DIODE 3.9V 0.5W AT.	1
U5	03-09226-00	IC SIL 9226	1
U3	03-09259-00	IC KA9259D	1
U1	03-09274-00	IC S5L9274	1
U6	03-09290-00	IC S5L 9290	1
U2	03-09702-001	IC RS9702-001 (FOR MP3)	1
	03-M1644-00	FILTE M11L1644SA-60J 4X4M DRAM	1
X2	04-00050-00	CRYSTAL HC-49/US 5MHZ	1
X1	04-00169-00	CRYSTAL HC-49/US 16.934MHZ	1
C602	05-05223-00A	A. CER CAP 0.022μF +80/-20%	1
EC2/3,11~13	05-25106-10	TAN CAP CHIP 10μF 25V 1206 SMT	5
EC4	05-25475-10	TAN CAP CHIP CER 4.7μF 25V 1206 SMT	1
C34	05-63020-00	CHIP CER 2PF ±5% NPO 0603 SMT	1
C35	05-63080-00	CHIP CER 8PF ±5% NPO 0603 SMT	1
C4,6,37	05-63102-01	CHIP 1000PF ±10% X7R 0603 SMT	3
C30,38,40~42,44,60/61,66	05-63103-01	CHIP 0.01μF ±10% X7R 0603 SMT	9
C7~18,20~27,39,52~56,62,65	05-63104-01	CHIP 0.1μF ±10% X7R 0603 SMT	28
C49,50	05-63152-01	CHIP 1500PF ±10% X7R 0603 SMT	2
C33	05-63153-01	CHIP 0.015μF ±10% X7R 0603 SMT	1
C47,48	05-63220-00	CHIP CER 22PF ±5% NPO 0603 SMT	2
C5,28,57	05-63222-01	CHIP 2200PF ±10% X7R 0603 SMT	3
C19	05-63224-01	CHIP 0.22μF ±10% X7R 0603 SMT	1
C1,2	05-63330-00	CHIP CAP 33PF ±5% NPO 0603 SMT	2
C31	05-63333-01	CHIP 0.033μF ±10% 0603 SMT	1
C45	05-63391-00	CHIP 390PF ±5% NPO 0603 SMT	1
C36,46	05-63472-01	CHIP 4700PF ±10% X7R 0603 SMT	2

ELECTRICAL PARTS LIST - CONTINUED

Ref. No.	Part No.	Description	Q'ty
C29,43	05-63474-00	CHIP CAP 0.47μF ±5% (+80/-20%)	2
C51	05-63683-01	CHIP 0.068μF ±10% 0603 SMT	1
C3	05-63821-00	CHIP 820PF ±5% 0603 SMT	1
EC1,5~8,14	06-16107-54	E. CAP CHIP 100μF/16V Ø6.3X5.5	6
EC9,10	06-16476-54	E. CAP CHIP 47μF/16V Ø5X5.5	2
J84	07-05100-00	RES. 10Ω 1/4W	1
MP36	07-05101-16A	RES. 100Ω 1/16W (TAPPING)	1
R601	07-05103-16A	RES. 10kΩ 1/16W (TAPPING)	1
R607	07-05105-16A	RES. 1MΩ 1/16W (TAPPING)	1
R609	07-05221-16A	RES. 220Ω 1/16W (TAPPING)	1
R608	07-05332-16A	RES. 3.3kΩ 1/16W (TAPPING)	1
R602	07-05563-16A	RES. 56kΩ 1/16W (TAPPING)	1
JR2,3,25,38,43~45,66,68	07-63000-00	CHIP RES. 0Ω 0603 SMT	9
R24,26	07-63022-00	CHIP RES. 2.2Ω ±1% 0603 SMT	2
R12	07-63100-00	CHIP RES. 10Ω ±5% 0603 SMT	1
R15~37,53	07-63102-00	CHIP RES. 1kΩ ±5% 0603 SMT	4
R3	07-03103-00	CHIP RES. 10kΩ ±5% 0603 SMT	1
R16,17,23	07-63104-00	CHIP RES. 100kΩ ±5% 0603 SMT	3
R7	07-63105-00	CHIP RES. 1MΩ ±5% 0603 SMT	1
R77	07-63124-00	CHIP RES. 120kΩ ±5% 0603 SMT	1
R28,56,57	07-63153-00	CHIP RES. 15kΩ ±5% 0603 SMT	3
R21,22,31	07-63154-00	CHIP RES. 150kΩ ±5% 0603 SMT	3
R6	07-63203-00	CHIP RES. 20kΩ ±5% 0603 SMT	1
R27,49,54,55	07-63222-00	CHIP RES. 2.2kΩ ±5% 0603 SMT	4
R2	07-63223-00	CHIP RES. 22kΩ ±5% 0603 SMT	1
R8,14,20,73	07-63224-00	CHIP RES. 220kΩ ±5% 0603 SMT	4
R19	07-63243-00	CHIP RES. 24kΩ ±5% 0603 SMT	1
R39	07-63274-00	CHIP RES. 270kΩ ±5% 0603 SMT	1
R18	07-63303-00	CHIP RES. 30kΩ ±5% 0603 SMT	1
R51	07-63392-00	CHIP RES. 3.9kΩ ±5% 0603 SMT	1
R9,30,41,46	07-63393-00	CHIP RES. 39kΩ ±5% 0603 SMT	4
R48,78	07-63472-00	CHIP RES. 4.7kΩ ±5% 0603 SMT	2
R1,13,33,34,40,SEL1,2	07-63473-00	CHIP RES. 47kΩ ±5% 0603 SMT	7
R64	07-03474-00	CHIP RES. 470kΩ ±5% 0603 SMT	1
R74	07-03562-00	CHIP RES. 5.6kΩ ±5% 0603 SMT	1
R63	07-03680-00	CHIP RES. 68Ω ±5% 0603 SMT	1
R15,29,42	07-63683-00	CHIP RES. 68kΩ ±5% 0603 SMT	3
R10,11	07-63753-00	CHIP RES. 75kΩ ±5% 0603 SMT	2
R62	07-63820-00	CHIP RES. 82Ω ±5% 0603 SMT	1
R4,5,52,76	07-63822-00	CHIP RES. 8.2kΩ ±5% 0603 SMT	4
R58~61	07-63823-00	CHIP RES. 82kΩ ±5% 0603 SMT	4
R	12-87020-630	PCB MP3/KMC SERVO (D/SIDE)	1
SW1	16-00033-01	MICRO SWITCH MPU10371MLBO (MIC)	1

ELECTRICAL PARTS LIST - CONTINUED

Ref. No.	Part No.	Description	Q'ty
PC BOARD ASSY, LINEOUT BOARD			
R420/1/2/3	07-05223-16A	RES. 22kΩ 1/16W (TAPPING)	4
RCA	20-20200-08	DOUBLE RCA CABLE 200MM GREY	1
PC BOARD ASSY, FRONT PCB & DETACHABLE BOARD			
	12-01000-345	FLEXIBLE PCB CDD100X3.2	1
	25-F5768-15	15PIN SOCKET	1
PC BOARD ASSY, LAMP BOARD			
Q402	01-08050-03	TR. 8050C TO-92-B	1
LED	02-30000-02	LED Ø3MM RED	1
LAMP	02-30553-60T	P.LAMP AA 3V 60MA Ø3X5.5 K.T.	1
R408	07-05102-16	RES 1k? 1/16W	1
R406	07-05151-00	RES 150? 1/16W	1
	12-03201-755	PCB CD-032X2 LB 1.0MM 41X18	1
RESET	16-01105-00K	TACT SW. 4P 7MM 160G (1102B)	1
SW	16-51377-00K	PUSH SW. SPP51377A (DS-20) KONEX	1
PC BOARD ASSY, EL DRIVER BOARD			
Q002	01-00435-00S	TRANSISTOR BD435 "SAM SUNG"	1
Q001	01-02785-00	TRANSISTOR 2SC2785-FF	1
D001~3	02-04148-00	DIODE IN-4148	3
Z001/3	02-50068-00	ZENER DIODE 6.8V 0.5W	2
Z002	02-50120-00	ZENER DIODE 12V BZX55-C12 ITT	1
C005	05-00104-82	CRE CAP 0.1μF 25V	1
C004	05-02128-10	MYLAR CER 0.0018μF ± 10%	1
Q002 "C" TO "GND"	05-03474-10M	CHIP CER KC20E1C474M-TP	1
C001	06-16227-01	E. CAP 220μF 16V (Ø6.3X12MM)	1
C0001	06-16475-01	E. CAP 4.7μF 16V (Ø4X7 MINI)	1
C002	06-16476-00	E. CAP 47μF 16V (Ø5X11 MM)	1
C003	06-50336-00	E. CAP 33μF 50V	1
ZD003 TO COIL	07-05047-16	RES. 4.7Ω 1/16W	1
R006	07-05152-16	RES. 1.5kΩ 1/16W	1
R002	07-05223-16	RES. 22kΩ 1/16W	1
R004	07-05272-16	RES. 2.7kΩ 1/16W	1
R007	07-05333-16	RES. 33kΩ 1/16W	1
	07-05471-16	RES. 470Ω 1/16W	1
R005	07-05561-16	RES. 560Ω 1/16W	1
R001	07-05682-16	RES. 6.8kΩ 1/16W	1
B+	09-70100-01	MICRO INDUCTOR 10UH AXIAL TYPE	1
L000	09-70270-01	COIL 27UH AXIAL TYPE (10MM)	1
	12-09368-900	PCB 09368 (VFD) DRV	1
	15-00013-00	VFD TRANS EE-13 SAGAMI	1

SPECIFICATIONS

T. H. D	Less than 0.35%
Signal to Noise Radio	More than 60 dB
Channel Separation	More than 60 dB
Frequency Response	20Hz-20kHz
Stereo separating (FM)	30 dB (at 1kHz)
Signal to noise ratio (FM)	Better than 50 dB
Output power	4 X 40W
Speaker output impedance	4 To 8 ohm
Power source	DC 12V, Negative ground.
Frequency range	FM 87.5 - 108.0MHz
	MW 522-1620 kHz
	LW 144 - 288 kHz
Sensitivity	FM 3 μV (S/N=30dB)
	MW 32 dBμ (S/N=20 dB)
	LW 35 dBμ (S/N=20 dB)

Specifications are subject to change without notice.